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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,082	12/01/2003	Tomoyuki Kobayashi	245962US0CONT	1666
22850	7590	12/29/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WOOD, ELIZABETH D	
			ART UNIT	PAPER NUMBER
			1755	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SUPPLEMENTAL Notice of Allowability	Application No.	Applicant(s)	
	10/724,082	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Elizabeth D. Wood	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 14-19, 22, 23 and 28-45.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>12232005</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Corwin Umbach on December 23, 2005.

The application has been amended as follows:

Replace the pending claims with the following new claim listing:

EXAMINER'S AMENDMENT - U.S. Application No. 10/724,082

Claims 1-13 (Canceled)

Claim 14 (Previously Presented): A crystallized glass for an optical filter substrate, which consists, as represented by mol% based on the following oxides, essentially of:

SiO ₂ :	30 to 65%,
Al ₂ O ₃ :	5 to 35%,
TiO ₂ +ZrO ₂ :	1 to 15%,
Na ₂ O:	0 to 30%,
K ₂ O:	5 to 30%, provided K ₂ O (%) ≥ Na ₂ O (%),
Li ₂ O:	0 to 15%,
MgO:	0 to 15%,
CaO:	0 to 15%,
SrO:	0 to 15%,
BaO:	0 to 15%,
ZnO:	0 to 15%,
B ₂ O ₃ :	0 to 15%,
P ₂ O ₅ :	0 to 15%,
Y ₂ O ₃ :	0 to 15%,

and which has an average linear expansion coefficient α_L of from $95 \times 10^{-7}/^{\circ}\text{C}$ to $130 \times 10^{-7}/^{\circ}\text{C}$ at from -30°C to 70°C , and which has a crystal or solid solution of $\text{Na}_{4-x}\text{K}_x\text{Al}_4\text{Si}_4\text{O}_{16}$ ($1 < x \leq 4$) precipitated therein.

Claim 15 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 14, wherein MgO: 1 to 15%.

Claim 16 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 14, which has an average linear expansion coefficient α_H of from $80 \times 10^{-7}/^{\circ}\text{C}$ to $155 \times 10^{-7}/^{\circ}\text{C}$ at from 190°C to 220°C .

Claim 17 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 14, which has an average linear expansion coefficient α_H of from $110 \times 10^{-7}/^{\circ}\text{C}$ to $145 \times 10^{-7}/^{\circ}\text{C}$.

Claim 18 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 14, which has a Young's modulus of at least 85 GPa.

Claim 19 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 14, which has an absorptivity coefficient of at most 0.03 mm^{-1} for a light having a wavelength of 1550 nm.

Claims 20-21 (Canceled)

Claim 22 (Currently Amended): ~~The optical filter according to Claim 20~~ An optical filter comprising
an optical filter substrate made of a crystallized glass for an optical filter substrate,
which has an average linear expansion coefficient α_L of from $95 \times 10^{-7}/^{\circ}\text{C}$ to $130 \times 10^{-7}/^{\circ}\text{C}$ at
from -30°C to 70°C , and which has a crystal or solid solution of
 $\text{Na}_{4-x}\text{K}_x\text{Al}_4\text{Si}_4\text{O}_{16}$ ($1 < x \leq 4$) precipitated therein; and
a dielectric multilayer film formed on the substrate, wherein
the crystallized glass consists, as represented by mol% based on the following oxides,
essentially of:

SiO_2 :	30 to 65%,
Al_2O_3 :	5 to 35%,
$\text{TiO}_2 + \text{ZrO}_2$:	1 to 15%,
Na_2O :	0 to 30%,
K_2O :	5 to 30%, provided $\text{K}_2\text{O} (\%) \geq \text{Na}_2\text{O} (\%)$,
Li_2O :	0 to 15%,
MgO :	0 to 15%,
CaO :	0 to 15%,
SrO :	0 to 15%,
BaO :	0 to 15%,
ZnO :	0 to 15%,
B_2O_3 :	0 to 15%,
P_2O_5 :	0 to 15%,
Y_2O_3 :	0 to 15%,

and which has an average linear expansion coefficient α_L of from $95 \times 10^{-7}/^{\circ}\text{C}$ to $130 \times 10^{-7}/^{\circ}\text{C}$
at from -30°C to 70°C , and which has a crystal or solid solution of
 $\text{Na}_{4-x}\text{K}_x\text{Al}_4\text{Si}_4\text{O}_{16}$ ($1 < x \leq 4$) precipitated therein.

Claim 23 (Previously Presented): The optical filter according to Claim 22, wherein
MgO: 1 to 15%.

Claims 24-27 (Canceled)

Claim 28 (Previously Presented): A crystallized glass for an optical filter substrate, which consists, as represented by mol% based on the following oxides, essentially of:

SiO ₂ :	35 to 60%,
Al ₂ O ₃ :	10 to 30%,
TiO ₂ +ZrO ₂ :	1 to 15%,
Na ₂ O:	4 to 20%,
K ₂ O:	4 to 20%,
CaO+SrO+BaO	0.1 to 10%,
MgO:	0 to 10%,
B ₂ O ₃ :	0 to 10%,
P ₂ O ₅ :	0 to 10%,

and which has an average linear expansion coefficient α_L of from $95 \times 10^{-7}/^{\circ}\text{C}$ to $130 \times 10^{-7}/^{\circ}\text{C}$ at from -30°C to 70°C , and which has a crystal or solid solution precipitated therein.

Claim 29 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 28, wherein $\text{K}_2\text{O} (\%) \geq \text{Na}_2\text{O} (\%)$.

Claim 30 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 28, wherein MgO: 1 to 15%.

Claim 31 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 28, which has an average linear expansion coefficient α_H of from $80 \times 10^{-7}/^{\circ}\text{C}$ to $155 \times 10^{-7}/^{\circ}\text{C}$ at from 190°C to 220°C .

Claim 32 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 28, which has an average linear expansion coefficient α_H of from $110 \times 10^{-7}/^{\circ}\text{C}$ to $145 \times 10^{-7}/^{\circ}\text{C}$.

Claim 33 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 28, which has a Young's modulus of at least 85 GPa.

Claim 34 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 28, which has an absorptivity coefficient of at most 0.03 mm^{-1} for a light having a wavelength of 1550 nm.

Claim 35 (Previously Presented): An optical filter comprising
an optical filter substrate made of a crystallized glass for an optical filter substrate,
which consists, as represented by mol% based on the following oxides, essentially of:

SiO ₂ :	35 to 60%,
Al ₂ O ₃ :	10 to 30%,
TiO ₂ +ZrO ₂ :	1 to 15%,
Na ₂ O:	4 to 20%,
K ₂ O:	4 to 20%,
CaO+SrO+BaO	0.1 to 10%,
MgO:	0 to 10%,
B ₂ O ₃ :	0 to 10%,
P ₂ O ₅ :	0 to 10%,

and which has an average linear expansion coefficient α_L of from $95 \times 10^{-7}/^{\circ}\text{C}$ to $130 \times 10^{-7}/^{\circ}\text{C}$
at from -30°C to 70°C , and which has a crystal or solid solution precipitated therein; and
a dielectric multilayer film formed on the substrate.

Claim 36 (Previously Presented): The optical filter according to Claim 35, wherein the
crystallized glass has $\text{K}_2\text{O} (\%) \geq \text{Na}_2\text{O} (\%)$.

Claim 37 (Previously Presented): The optical filter according to Claim 35, wherein the
crystallized glass has MgO: 1 to 15%.

Claim 38 (Previously Presented): The optical filter according to Claim 35, wherein the crystallized glass has an average linear expansion coefficient α_H of from $80 \times 10^{-7}/^{\circ}\text{C}$ to $155 \times 10^{-7}/^{\circ}\text{C}$ at from 190°C to 220°C .

Claim 39 (Previously Presented): The optical filter according to Claim 35, wherein the crystallized glass has an average linear expansion coefficient α_H of from $110 \times 10^{-7}/^{\circ}\text{C}$ to $145 \times 10^{-7}/^{\circ}\text{C}$.

Claim 40 (Previously Presented): The optical filter according to Claim 35, wherein the crystallized glass has a Young's modulus of at least 85 GPa.

Claim 41 (Previously Presented): The optical filter according to Claim 35, wherein the crystallized glass has an absorptivity coefficient of at most 0.03 mm^{-1} for a light having a wavelength of 1550 nm.

Claim 42 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 14, wherein $\text{K}_2\text{O} (\%) \geq 1.5 \text{ Na}_2\text{O} (\%)$.

Claim 43 (Previously Presented): The optical filter according to Claim 22, wherein $\text{K}_2\text{O} (\%) \geq 1.5 \text{ Na}_2\text{O} (\%)$.

Claim 44 (Previously Presented): The crystallized glass for an optical filter substrate according to Claim 29, wherein $\text{K}_2\text{O} (\%) \geq 1.5 \text{ Na}_2\text{O} (\%)$.

Claim 45 (Previously Presented): The optical filter according to Claim 36, wherein the crystallized glass has K_2O (%) ≥ 1.5 Na_2O (%).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth D. Wood whose telephone number is 571-272-1377. The examiner can normally be reached on M-F, 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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edw